

## **ABSTRACT**

A communication among participants in on-line virtual environments is disclosed. The communication with reality among the participants is effected in the diverse virtual environments such as an on-line game, chatting, etc., by converting a text message from a specified person into a speech having its own tone during the text message communication among the participants, and by reproducing the converted message through a receiver's speaker with a sound effect added thereto. The on-line communication by speech among the participants is effected without affecting the load of the network by converting the text message received in a user terminal into the speech using a text-to-speech converter, and by reproducing the converted speech through the speaker. By adopting a three dimensional (3D) stereophonic sound technique considering a positional relation between the message sender and receiver and the sound effect using the environment of the virtual space where the receiver currently exists, the communication can be effected by speech with reality and in a distinctive manner against the other participants.